AMENDMENTS IN THE CLAIMS

Please amend claims 1, 5, 17, 20, 22 and 23 as follows and newly add claims 24-34 as follows by this amendment:

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1. (Currently Amended) An optical channel monitoring apparatus, comprising:

an input unit comprising a lensed fiber receiving a wavelength division multiplexed (WDM) optical signal via an optical transmission medium and producing a collimated beam of optical signals, said input unit further comprising a concave lens receiving said collimated beam and outputting a plurality of optical signals that have a continuous range of incidence angles ~~according to the wavelengths each of said plurality of optical signals~~; and

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a filter for receiving said plurality of optical signals from the input unit and separating the WDM optical signal into a plurality of optical signals having different wavelengths using the difference between resonance lengths according to the incident angles.

2. (Previously Amended) The apparatus of claim 1, further comprising an array of detectors receiving optical signals output by said filter and converting said optical signals into electrical signals, each detector being positioned to pick up a specific wavelength of incident radiation emanating from the filter, said apparatus further comprising a microprocessor calculating signal to noise ratio and spectral components of said optical signals output from said filter.

3. (Previously Amended) The apparatus claim 2, an etalon is used as the filter.

4. (Previously Amended) An optical channel monitoring apparatus, comprising:

an input part receiving a multiplexed, collimated optical signal and dispersing said collimated optical signal via a concave lens into a beam having different incident angles;

an optical filter receiving the wavelength division multiplexed (WDM) optical signal having different incident angles from the input part and separating the spanned WDM optical signal into a plurality of optical signals having different wavelengths using the difference between resonance lengths according to the different incidence angles; and

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a plurality of detectors, each detector being spatially positioned to receive incident radiation of a specific wavelength, said plurality of detectors detecting the intensity of each of said plurality of optical signals having different wavelengths and converting said optical signals to electrical signals.

5. (Currently Amended) An optical channel monitoring method, comprising the steps of:

receiving a wavelength division multiplexed (WDM) optical signal from an optical transmission medium and outputting, via a concave lens, a plurality of optical signals spanning a continuous range of incidence angles ~~according to the wavelengths of the optical signals~~;

receiving said plurality of optical signals spanning said range of incident angles and separating the WDM optical signal according to wavelengths using the difference between resonance lengths according to the different incidence angles; and

detecting the intensity of each of said plurality of optical signals having different

wavelengths and converting said intensity into a corresponding plurality of electrical signals.

6. (Canceled)

7. (Previously Amended) The apparatus of claim 3, further comprising a beam size controller between said etalon and said detector to amplify said plurality of optical signals having different wavelengths in order to be detected by said array of detectors.

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8. (Canceled)

9. (Previously Amended) The apparatus of claim 4, said concave lens dispersing an input collimated WDM beam into a beam spanning a range of angles, said range of angles being about 10 degrees.

10. (Previously Amended) The apparatus of claim 9, further comprising an optical amplifier amplifying each of said plurality of optical signals having different wavelengths output by said filter allowing said plurality of optical signals having different wavelengths to be detected by corresponding ones of said plurality of detectors.

11. (Original) The apparatus of claim 4, said optical filter being a Fabry-Perot etalon.

12. (Previously Amended) The apparatus of claim 10, further comprising a microprocessor that determines the wavelength and the optical signal to noise ratio for each of said plurality of optical signals having different wavelengths from said plurality of electrical signals produced by said plurality of detectors.

13. (Original) The method of claim 5, further comprising the step of inputting each of said plurality of electrical signals into a microprocessor.

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14. (Previously Amended) The method of claim 13, further comprising the step of determining spectral components and the optical signal to noise ratio for each wavelength in said plurality of optical signals having different wavelengths by processing said plurality of electrical signals by said microprocessor.

15. (Previously Amended) The method of claim 14, further comprising the step of amplifying said plurality of optical signals having different wavelengths immediately after separating said optical signals according to wavelengths and immediately prior to said detecting step.

16. (Original) The method of claim 15, a Fabry-Perot etalon is used to separate said WDM signal into said plurality of optical signals having different wavelengths.

17. (Currently Amended) A method for monitoring and diagnosing spectral components and signal to noise ~~rations~~ ratios of a WDM optical signals passing through an optical fiber, said method comprising the steps of:

outputting said optical signals out of an end of said optical fiber, said end of said optical fiber being lensed producing collimated optical signals upon being output from said optical fiber;

inputting said collimated optical signals into a cylindrical concave lens producing a continuous span of output angles of propagation of said optical signals;

inputting said span of optical signals into a Fabry Perot etalon resonator to separate said optical signals by wavelengths based on incident angles input into said etalon;

inputting said optical signals separated by wavelengths onto an array of detectors producing electrical signals corresponding to wavelengths of said optical signals output from said etalon; and

inputting said electrical signals into a microprocessor to calculate spectral components of said optical signal and signal to noise ratio of said optical signal.

18. (Previously added) The method of claim 17, said continuous span of angles being 10 degrees corresponding to a 25 nm range of wavelengths being diagnosed and monitored.

19. (Previously added) The method of claim 17, said method being able to analyze spectral components of said optical signal with a resolution of 0.1 nm.

20. (Currently Amended) The method of claim 18, said etalon having a thickness of 28 ~~nm~~ microns and the FSR of the etalon being 30 nm.

21.(Previously added) The method of claim 17, further comprising the step of amplifying said optical signals separated by wavelengths emerging from said etalon prior to inputting said optical signals onto said array of detectors.

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22. (Currently Amended) The apparatus of claim 11, said etalon being 28 ~~nm~~ microns thick, said etalon having a FSR of 30 nm, said apparatus having a resolution of 0.1 nm.

23. (Currently Amended) The apparatus of claim 3, said etalon being 28 ~~nm~~ microns thick, said etalon having a FSR of 30 nm, said apparatus having a resolution of 0.1 nm.

24. (New) The apparatus of claim 1, said filter being an etalon having a thickness of 28 microns.

25. (New) The apparatus of claim 1, said filter being an etalon having a free spectral range of 30 nm.

26. (New) The apparatus of claim 1, said filter being an etalon wherein said continuous range of incident angles is greater than 10 degrees.

27. (New) The apparatus of claim 4, said optical filter being an etalon having a thickness of 28 microns.

28. (New) The apparatus of claim 4, said optical filter being an etalon having a free spectral range of 30 nm.

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29. (New) The apparatus of claim 4, said filter being an etalon wherein said incident angles spanning a range greater than 10 degrees.

30. (New) An optical channel monitoring apparatus monitoring the spectral components and the signal to noise ratio of data channels in a wavelength division multiplexed (WDM) optical signal in an optical fiber, said apparatus comprising:

a concave lens receiving a collimated WDM optical signal from an optical fiber and emitting a beam spanning a range of angles, said range of angles being at least 10 degrees;

n 30 micron thick etalon receiving said spanned beam and outputting light where the wavelength of said outputted light is dependent on the angle of incidence of light on the etalon, said light output from said etalon having a range of 30 nm in wavelength; and

an array of detectors receiving said light output from said etalon, each detector being positioned to receive light of a specific wavelength in said 30 nm range of wavelengths, said detectors converting said received light into electrical signals.

31. (New) The apparatus of claim 30, said etalon having a resolution of about 0.1 nm.

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32. (New) The apparatus of claim 30, said etalon having a finesse of about 300.

33. (New) The apparatus of claim 30, said etalon having a free spectral range of about 30 nm.

34. (New) The apparatus of claim 30, said apparatus further comprising a microprocessor receiving said electrical signals from said array of detectors, said microprocessor being programmed and configured to calculate the intensity of each spectral component and the signal to noise ratio of each spectral component of said WDM optical signal.